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ABSTRACT

This study analyzed the effects of a kindergarten phonological awareness training program, STeps Into Reading (STIR) on the number of special education referrals, classifications, and retentions in a rural elementary school in New York. These numbers were compared prior to and after the program's implementation. STIR is based on research in the area of phonological awareness and includes components of student screening, teacher training, parent education, a parent communication system, congruence with the regular classroom, ongoing program evaluation, and continuous student assessment. Before STIR was implemented, the only way to receive academic support in kindergarten or first grade was to be classified for special education. Special education records from 1984-1991 were compared to those from 1991 through 1996. Retention rate was determined by the number of students in the prefirst program. Results indicated a significant reduction in referrals and special education classifications after the STIR phonological awareness program was established. The prefirst program was eliminated in 1993 due partially to the effectiveness of the STIR kindergarten program. However, this elimination had unexpected effects as third grade teachers reported fewer students, with a lower average chronological age, were ready for the switch to a more content-based curriculum. "The critical year for the difference in the maturity level of chronologically young children may be in fourth grade, not in third as was suspected." (Contains 33 references.) (DB)

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The Effects of a Kindergarten Prevention Program on Special Education Referrals, Classifications and Retentions

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Abstract

This study analyzes the effects of a kindergarten phonological awareness training program, STeps Into Reading, on the number of special education referrals, classifications and retentions in an elementary school. These numbers were examined pre-program and post-program.

The results show that there was a significant reduction in referrals and classifications after the phonological awareness program was established. The study also demonstrates that one of the factors in eliminating the transitional prefirst class, which was the primary vehicle for retention, was partially due to the existence of STeps Into Reading.

The Effects of a Kindergarten Prevention Program on Special Education Referrals and Retentions

American schools are failing to educate many children. When a child fails to grasp academic skills, the typical response of a school is to retain the child, track the child or refer the child for special education (McPartland & Slavin, 1990). This response does not address the issue effectively. It is a reactive response rather than a proactive response, a costly response rather than a cost-effective response, a deficiency model rather than an enrichment model.

Difficulty with reading is one of the prime considerations in making the decision to retain children or place them in remedial and special education programs. Failing to learn to read does have lasting consequences. A longitudinal study by Lloyd (1978) revealed that disadvantaged third graders who were reading below grade level and had been retained were extremely unlikely to complete high school. Juel (1988) followed the literacy development of children from first grade to fourth grade. She found that the probability of a first grade child who was a poor reader remaining a poor reader in fourth grade was .88. What she called a "vicious cycle" occurred. Children, who did not develop good word recognition skills in first grade, disliked reading and thus read less than others of the same age. They began to lose the avenue to develop vocabulary, concepts and ideas that reading promotes. What then happens is what Stanovich

(1986) called the "Mattnew Effect." The better readers get better, the poorer readers poorer, and the gulf widens between the two groups.

Remedial and special education programs both try to address the academic needs of students. Remedial programs, such as Title I, were initiated to help disadvantaged students catch up academically with supplementary services. On the other hand, special education students are considered to have disabilities or handicapping conditions that effect their ability to learn. The expectation is that even with help special education students will continue to need specialized instruction to make gains and to learn compensatory strategies. Allington and McGill-Franzen (1990, p.8) concluded that ". . . too often these interventions provide no educational advantage to the children who participate in them even though the added costs are often substantial."

Title I's effectiveness has been studied at a national level. Large scaled studies (Carter, 1984; Slavin, 1991) concluded that positive effects were often nonexistent. Kennedy, Berman and Demaline (1986) found that remedial programs produced little positive results on children after the third grade level.

Unlike Title I, special education academic effects have not been studied on a national level. Spear-Swerling and Sternberg (1996) state that sometimes the learning disabled label worsens the lot of poor readers rather than improving it. Walmsley and Allington (1995, p.24-25) maintain that "there is insufficient

evidence to support the assertion that special education programs generally and, especially those for the mildly handicapped, substantially enhance academic learning of participants."

Another method of helping students who are behind is retention, either as "failing" or being part of a transitional class. Allington and McGill-Franzen (1995) report a wide varying rate of retentions in schools from 0 to 40%. Holmes (1989) did a meta-analysis of sixty-three studies of retention and found that academic and other measures favored socially promoted students. Balow and Schwager (1990) concluded from their study that retention showed no positive effects on either academics or motivation. Transitional classes have not fared favorably in research either. Leinhardt (1980) found that children from transitional classes fared no better than those who had been retained. Again, the socially promoted children fared better academically and socially.

Given the preceding literature on remediation and retention, the response to effecting change should logically begin long before children reach third grade. It belongs before a child fails. It belongs before a child learns to read. The knowledge is available: early identification can pave the way for effective intervention.

Research (Badian, 1994; Felton, 1992) from the past twenty-five years has strongly supported the idea that a specific area of language, phonological

processing, is a strong predictor of the ease with which children learn to read. Felton and Pepper (1995) summarized three major types of phonological processes as the most critical to developing basic reading skills: phonological awareness, phonological coding in working memory and phonological coding in lexical access. Stanovich (1993/94) stated that assessment in phonological awareness is a better predictor of success in learning to read than any other variable, including IQ. Phonological awareness is generally defined as a person's awareness of the phonological structure of his language. It is the foundation for learning sound/symbol correspondences.

Badian (1994) and Felton (1992) both tested kindergarten students on various phonological awareness measures and found that they predicted later reading achievement. Once a child is identified as having a weakness in phonological awareness skills, intervention should begin before reading instruction starts. In the past children had to fail before help was given. Studies have found that phonological awareness instruction plus reading instruction was effective with first and second graders (Bradley & Bryant, 1985; Hatcher, Hulme, & Ellis, 1994).

Fewer studies have been done on kindergarten students because for many years preschool programs did not focus on emerging literacy skills as it was felt not to be developmentally appropriate (Heibert & Taylor, 1994). Ball and

Blachman (1988, 1991), Blachman (1994), and Lundberg, Frost, and Peterson (1988) have all studied the effect of phonological awareness training on kindergarten students. These studies reported that this training facilitated the acquisition of reading and spelling.

Hyla Rubin often gives workshops to demonstrate her work with kindergartners in Connecticut. Her program, teaching language analysis activities with a combination whole class and small group instruction, was found to reduce referrals to special education for first graders (Clark & Uhry, 1995).

These various areas of research complement each other. First, the research is clear that students are most successful when they learn to read on grade level before third grade. Second, it is also known that the traditional supports, Title I and special education programs, are not extremely effective in meeting students' needs in the area of literacy. Nor have retentions been shown to be an effective treatment. The most likely cause of the failures of these interventions is that the support is initiated after the child has failed. What has been shown to be effective is taking a proactive stance: screening students in the area of phonological awareness and then training them in these skills before they are taught to read.

This issue is timely as New York State is proposing a change in the funding of special education. In a recent memo from the State Education

Department (1996), the proposed reform of special education funding is explained. The proposed Regents reform is to remove the fiscal incentives for referring students with minimal problems to special education. School districts will be encouraged to reduce unnecessary referrals, move students into less restrictive settings, and institute prevention and early intervention programs. It is also being recommended that funds to strengthen general education reading programs be increased.

This paper examines the effect of a kindergarten intervention program on the number of special education referrals, classifications and retentions in a rural elementary school. By having an intervention program in the kindergarten, it was expected that the number of referrals to special education in kindergarten and first grade would drop. By addressing the students' needs earlier, the failure rate which would necessitate referrals and classification would be reduced. Also by addressing the needs of students in kindergarten, it would eliminate the need to retain children, another costly and often ineffective method of remediation.

Method

Setting

This study took place in a small school district in New York State. The elementary school, kindergarten through fifth grade, was the only one in the district and housed approximately 600 students. The total district population was

1200 students. In 1991, a first grade program called STIR (STeps Into Reading) was initiated to provide first grade students with academic support. In 1992, STIR was extended to the kindergarten.

Before STIR, the only way to receive academic support in kindergarten or first grade was to be classified for special education. Title I services began in second grade. STIR, based on research in the area of phonological awareness, was developed by a reading specialist and a speech and language pathologist, both of whom were faculty at the school. This program has been researched (Dwyer & Rule, 1996) in order to receive Validation through New York State Education Department's Sharing Successful Programs. It has also been replicated in several other New York State schools.

Prior to 1993-94, most retentions in this school took place in the form of prefirst. Students were identified by teachers as "developmentally young" and those whose parents agreed to the placement spent a year in the prefirst program before going to first grade.

Intervention Program

The STIR program is a comprehensive prevention program. The components of the program used during this study included screening of students, teacher training, parent education, a parent communication system, congruence

with the regular classroom, ongoing evaluation of the program, and continuous assessment of the students as well as the treatment program.

At the end of September all kindergarten students were screened on the Dwyer/Pittman screening which determines a child's level of phonological awareness and speed of naming objects and colors (i.e., rapid naming). Based on this screening, the lowest 20% of students were identified for STIR. The identified students met in small groups (approximately five students) four times a week for 20 minutes. The sessions, which generally took place in the regular classroom, included skills in phonological awareness (e.g., rhyming, alliteration, segmentation), concepts about print, alphabet and sounds, and writing skills. These skills were introduced through literature, such as nursery rhymes. The classroom teachers, speech pathologists, and STIR teachers met once every two weeks to talk about the program and to ensure that there was congruence between STIR and the kindergarten program.

Parent participation played an important role within the program. Before STIR classes began, parents were invited to an introductory meeting. At this time the program was explained and parent activity kits were distributed. Parents were also encouraged to take a four hour workshop that explained the STIR program in more detail and offered suggestions on how to help children develop reading readiness skills.

Additionally each week a letter went home to the parents with an explanation of what skills were taught during the week in STIR. Parents were then asked to write in a homebook what activities or games they used with their child to reinforce the skills taught. Parents received STIR reports at each marking period as the children were assessed individually every few months to make sure they had mastered the skills.

Participants

The participants of this study were the students who attended the elementary school between the years 1984 to 1996 and who were referred to special education for assessment, classified or retained (up to 1993) through a pre-first program. This range encompasses seven years prior and five years after STIR was initiated. The students in this school were mostly middle class white students with minorities constituting six percent of the district population.

Procedure

Special education records from the years 1984-96 were obtained from the Office of Special Education. The number of students in the elementary school, K-5, who were referred to the Committee on Special Education as well as those who were classified during those years were examined. The years were divided into pre-program years and post-program years. Although the kindergarten program was initiated in 1992, post-program years were considered from 1991-

1992 since the first grade STIR Program was begun. This was done to take into account the potential reductions in referrals and classifications that may have resulted due to the introduction of STIR in first grade during the 1991-1992 school year.

Data on retention in grades K, 1, and 2 were gathered from the principal of the elementary school. In the school year, 1993-1994, the existing prefirst program was abolished. Previous to September, 1993 retention was generally done by having an extra year in prefirst. Since only one student in the last 15 years (principal's tenure) was put into second grade from prefirst[1], the retention rate was determined by the average number of students who were in the prefirst program over the years, 1984-93. Except for an occasional exception, two in the memory of the principal, the only other students who would have been given an extra year were some of the classified students in the then existing self contained classrooms. These students were not considered part of the sample.

Evaluation Design

A comparison was made between the number of students in kindergarten and first grade who were referred to special education before the STIR program and the number who were referred after the first grade STIR program was

[1] This student was subsequently eliminated from the analysis.

initiated. An examination was also made between the number of retentions before the STIR program began and after it began.

Data Analysis Techniques

Percent of Special Education Referrals and Classifications. Longitudinal data on the percent of children referred to special education and classified by the Committee on Special Education were analyzed by calculating the Test of Significance of Difference Between Two Proportions on median pre-and post-program values (Table 1, see Appendix A). Post-program medians were based on five years: 1991-92 through 1995-96. Pre-program medians were based on seven years: 1984-85 through 1990-91. Alpha was set at .05. Raw data of the special education referrals and classifications pre- and post-program are also presented in Table 1.

Percent of Retentions. Longitudinal data on the percent of the children who were retained from September, 1984 to June, 1993 were compared to those retained from September, 1993 to June, 1996. When examining this data, it is necessary to realize that this data is pre-prefirst and post-prefirst since prefirst was virtually the only method of retention. As will be discussed in the results, the availability of the STIR program added to the decision to eliminate the prefirst program.

Results

Percent of special education referrals and classifications

Longitudinal data were gathered on the percent of children enrolled who had been referred for special education evaluation and the percent who received a special education classification. Table 1 displays the data for the seven years prior to the introduction of the STIR 1 program (i.e., 1984-85 to 1990-1991) and for the five years following the inception of STIR (i.e., 1991-92 to 1995-96). Visual inspection of the data shows a marked decline in the percent of referrals and classifications after STIR was introduced. This decline was apparent in both the K-1 and K-5 breakouts.

In order to determine if there had been a significant drop in K-1 referrals and classifications, pre- and post-STIR median percentages were calculated for each. The pre-STIR implementation (1984-1985 to 1990-1991 school years) median was 7.77 percent for K-1 referrals and 5.76 percent for K-1 classifications. The post-STIR (1992-1993 to 1995-1996) median was 2.27 percent for K-1 referrals and 1.79 percent for K-1 classifications. Using the Test for Significance Difference Between Two Proportions (c.f., Bruning & Kintz, 1987), the difference between pre- and post-STIR implementation for referrals was 5.50% for referrals ($p < .01$) and for classifications was 3.97% ($p < .05$). Statistical analysis confirmed that the percentages of K-1 special education

referrals and classifications were significantly lower during the post-STIR years than in the pre-STIR years.

K-5 referrals and classifications were also examined to determine the effect of the prevention program on the entire elementary school. Pre- and post-STIR median percentages were calculated for each. The pre-STIR implementation (1984-1985 to 1990-1991 school years) median was 4.54 percent for K-5 referrals and 3.63 percent for K-5 classifications. The post-STIR (1992-1993 to 1995-1996) median was 1.51 percent for K-5 referrals and 1.34 percent for K-5 classifications. Using the Test for Significance Difference Between Two Proportions (c.f., Bruning & Kintz, 1987), the difference between pre- and post-STIR implementation for K-5 referrals was 3.03 percent for referrals ($p<.05$) and for K-5 classifications was 2.29 percent ($p<.05$). Again, statistical analysis confirmed that there was a significant drop in the number of K-5 referrals and classifications after the STIR program was implemented.

Percent of retentions

Longitudinal data were gathered on the percent of children who had been retained in kindergarten and first grade since 1984.

For the first STIR K class and the first class without prefirst, one student was retained at the end of first grade. When this class finished second grade, a

parent requested another retention and one more child was retained with a joint home/school decision. Therefore, this class had a total of 3 retentions.

The next class had one retention in kindergarten, a joint home/school decision and three retentions in first grade, two school initiated and one parent initiated. No one in this class was retained in second grade. The present second grade class (1996-1997) has had no retentions to date.

The following is the number of retentions before STIR and after STIR:

Description	numbers
pre-STIR	
average number of students retained through prefirst (1984-1985 to 1992-1993)	14
post-STIR	
students proposed for prefirst by kindergarten teachers the year prefirst was dismantled (June, 1993)	17
students from the first class without prefirst who were subsequently retained; class now in fourth grade	3
students from the second class without prefirst who were subsequently retained; class now in third grade	4
students from the third class without prefirst who were subsequently retained; class now in second	0

Discussion

The initiation of the kindergarten STIR program had a major impact on the primary grades in this school. Special education referrals and classifications dropped. Students began to receive support before they failed: a preventative model rather than a remedial one. In addition, the prefirst program was

abolished and a different method of addressing the needs of developmentally young children was introduced and coordinated with the STIR program. A by-product of this model was that by reorganizing and reducing the amount of time on evaluations for special education, more time could be spent on working with students before they failed.

Although there are confounds in this research, such as change in staff and policy, the downward trend in special education enrollments in this district since the introduction of the STIR program is especially meaningful in light of the increasing special education enrollment observed throughout New York State. According to a State Education Department report (February, 1995), the number of students enrolled in K-12 special education programs statewide increased 61% over the past 15 years, while statewide public enrollment decreased by 12%. In 1978-79, 5.9 % of the state's students had a special education classification; in 1993-94, this percentage jumped to 10.9%. For the balance of the state, not including New York City, special education enrollments were as follows:

1978-79	6.1%
1983-8.9	8.9%
1988-89	9.7%
1993-94	10.8%

According to a newspaper article which examined special education

enrollments between 1991 and 1994 in Dutchess County, increases were observed in all but two school districts, one them being this school district (Rowe, 11/12/95). This school district showed a 19.7% decrease in special education enrollments districtwide between 1991 and 1994, while 11 of the 12 other county districts posted increases ranging from 1.7% to 50%. Overall, there was a 19.5% increase in special education enrollments in Dutchess County, with an overall student population growth of 5%.

With New York State's proposed change in funding and shift to prevention programs, this school district will be in an advantageous position as it already has instituted a prevention program. If the state does increase funds for general education reading, the district will be able to use the funds to strengthen the program rather than to develop one. Also, with the percentage of handicapped students lowered, the district may not lose money if the state sets the level for special education funding at a specific percentage.

These findings suggest that STIR also played a role in the reduction of retentions due to the fact that there was a program in regular education for the students who would have difficulty acquiring reading skills. For the 1993-94 school year, the decision was made to dissolve the prefirst program and instead to institute a supportive first grade class and second grade class. According to the principal, this was done for several reasons:

- *Economic political:* In the economic climate, it was becoming harder to justify the cost of a small class. More parents seemed to be refusing the option of prefirst for their child.
- *Sociological:* In the era of inclusion, the idea of prefirst violated the philosophy of integrating all students in heterogenous classes.
- *Research:* Research has discredited prefirst programs and other retentions. It has been shown to be highly related to school drop outs and low self-esteem.
- *STIR:* In previous years, there was no academic support program, except for self contained special education classes, for students of this age. Once STIR began, most of the students who would have been slated for prefirst had already received the kindergarten STIR program and were ready for the next step of the first grade program.

An unanticipated finding, that was not foreseen through the research, was the impact of more students being chronologically younger by one year. Through second grade, the teaching methods and organization of this school are more on a developmental, early childhood model. Third grade begins reading to learn and the first grouping for instruction outside of the homeroom takes place. Although the students did well on running records at the end of second grade, the third grade teachers felt that many more students were not ready for the way they

organize or the way they test. They are disorganized with their materials, not ready to work independently, and have difficulty with reading text books: tasks that were not expected of them previously. In addition, the first class without prefirst performed lower on the statewide test in reading then students had in previous years. Many teachers felt this was the result of abolishing prefirst.

Reinstituting prefirst may not be the answer. While research (Holmes, 1989) has supported the promotion of students for both academic and social reasons, there is clearly a need for the curriculum and program to meet the developmental needs of students. There may be a need to continue the supportive classes through third grade with staff development to help teachers understand the different needs of these students.

In conclusion, a program, such as STeps Into Reading, that addresses the needs of students before they fail to learn to read can reduce special education referrals and classifications and in this district has led to a reduction in retentions through abolishing the prefirst program. This is beneficial as more children are receiving extra support in a timely fashion without being labeled. This does not say that the effect of lowering the retention rate has necessarily been seen to be beneficial by staff. Third grade teachers have seen a dramatic change in the number of students who do not appear to be ready for their program. This is an issue that needs to be addressed and watched closely. The critical year for the

difference in the maturity level of chronologically young children may be in fourth grade, not in third as was suspected. These students may need another year or more in a general education program that takes into account their specific needs.

Further research should be considered. What happens to these students as they progress through the grades? Does their "youngness" become less of an issue? Since the STIR program has been replicated in other districts, it would be useful to look at their records to see if their special education referrals, classifications and retentions have been lowered also.

Table 1
Longitudinal Data on Percent of Special Education Referrals and Classifications Pre- and Post-Program

Year	K-1 Enrollment	%K-1 Referred	%K-1 Classified	K-5 Enrollment	%K-5 Referred	%K-5 Classified
Post-Program: 1995-96	192	(2)1.04%	(2) 1.04%	598	(9) 1.51%	(8) 1.34%
1994-95	168	(3) 1.79%	(3) 1.79%	589	(8) 1.36%	(8) 1.36%
1993-94	204	(5) 2.45%	(4) 1.96%	623	(9) 1.44%	(4) .64%
1992-93	220	(5) 2.27%	(3) 1.36%	656	(13) 1.98%	(6) .91%
1991-92	219	(7) 3.20%	(5) 2.28%	637	(14) 2.20%	(9) 1.41%
Post-Program Median	**204**	**2.27%**	**1.79%**	**623**	**1.51%**	**1.34%**
Pre-Program: 1990-91	211	(12) 5.69%	(9) 4.27%	615	(18) 2.93%	(14) 2.28%
1989-90	230	(13) 5.65%	(11)4.78%	604	(21) 3.48%	(16) 6.96%
1988-89	227	(17) 7.49%	(11)4.85%	591	(23) 3.89%	(15) 2.54%
1987-88	206	(16) 7.77%	(15)7.28%	551	(25) 4.54%	(20) 3.63%
1986-87	191	(18) 9.42%	(11)5.76%	534	(31) 5.81%	(16) 3.00%
1985-86	179	(19) 10.61%	(13)7.26%	505	(31) 6.14%	(21) 4.16%
1984-85	179	(14) 7.82%	(11)6.15%	498	(26) 5.22%	(19) 3.82%
Pre-Program Median	**206**	**7.77%**	**5.76%**	**551**	**4.54%**	**3.63%**
Pre-Post Change	**-2**	**-5.50****	**-3.97***	**+72**	**-3.03%***	**-2.29%***

* Statistically significant: $p < .05$
**Statistically significant: $p < .01$
note: numbers in parenthesis are the raw data

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